To: Wooster, Richard[Wooster.Richard@epa.gov]
From: Griffin, Lindsey
Sent: Mon 4/23/2018 8:19:48 PM
Subject: RE: OK 2014 TP language

Ok thanks Rich. I'll work the acceptance letter forward so it's ready when you get back.

Lindsey

From: Wooster, Richard
Sent: Monday, April 23, 2018 3:18 PM
To: Griffin, Lindsey <Griffin.Lindsey@epa.gov>
Subject: RE: OK 2014 TP language

I think this language is ok and could be carried forward, except for the verbiage in the penultimate paragraph.

Thanks,
richard

From: Griffin, Lindsey
Sent: Monday, April 23, 2018 2:39 PM
To: Wooster, Richard <Wooster.Richard@epa.gov>
Subject: OK 2014 TP language

Hi Rich,

Here is the language from the 2014 OK list. If you could give me your thoughts on what to include or touch on for the 2016 list, I can finish the decision document.

Methodology for Total Phosphorus in Scenic Rivers

The state elected to not place Lee Creek, Little Lee Creek, and Little River (Mountain Fork) on the 2012 § 303(d) list for total phosphorus. The basis for the state's decision to not list these waters was that they were in compliance with the total phosphorus criterion (0.037mg/L) protective of the Aesthetics beneficial use. Less than 25% of the rolling 90-day geometric means calculated for total phosphorus in each of these waters exceeded the criterion. In a segment of a Scenic River, 25% or more of these rolling 90-day geometric means must exceed the total phosphorus criterion for the Aesthetics beneficial use to be deemed not supported, as outlined in Oklahoma's Use Support Assessment Protocols (USAPs) found in the state's Administrative Code, Title 785, Chapter 46.

In its action on the 2012 § 303(d) list, EPA expressed concern about the possible incongruity between the state's water quality standards (WQS) and its use support assessment protocols for the evaluation of total phosphorus data against the state's Scenic Rivers criterion (0.037mg/L total phosphorus). Oklahoma's WQS, as outlined in Oklahoma's Administrative Code, Title 785, Chapter 45, state that the "thirty (30) day geometric mean total phosphorus concentration in waters designated "Scenic River"…shall not exceed 0.037mg/L." As a result of this observation, EPA determined to neither approve nor disapprove the state's omission of Lee Creek, Little Lee Creek and Little River (Mountain Fork) from the 2012 § 303(d) list for total phosphorus. At that time, EPA indicated that the conflicts between the Oklahoma WQS and USAPs must be reconciled in some manner so as to clarify the state's expectations for assessing the total phosphorus criterion in Scenic Rivers.

In its review of the 2014 § 303(d) list, EPA noted that the above mentioned waters remain unlisted for total phosphorus as a cause of impairment of the Aesthetics use. In considering a path forward on this issue, EPA Region 6 staff became aware of a similar issue being encountered by states with regard to implementation of EPA's recently released recreational water quality criteria (RWQC) (USEPA, 2012). Similar to the manner in which Oklahoma's total phosphorus criterion are described in the state's WQS, the RWQC incorporate a geometric mean that is not to be exceeded in any 30-day interval.

Nationally, States have expressed no concerns with the 30-day duration for waters that are frequently monitored

(e.g., weekly) but are concerned about applying a 30-day duration for waters with more limited sampling (e.g., monthly or quarterly). For example, where monitoring is monthly, only one sample would be available to compare to the geometric mean WQS. The concern is with allowing one sample to represent a geometric mean, when a geometric mean is supposed to reflect a type of central tendency based on multiple samples.

Where monitoring is performed monthly, EPA recognizes that using one sample as an expression of the geometric mean is untenable. In an effort to be responsive to concerns raised by the states, EPA's Office of Science and Technology (OST) and Office of Wetlands, Oceans and Watersheds (OWOW) have engaged statisticians on a project to determine if there is a scientifically defensible statistical basis for combining assessment periods in some way so as to increase the number of samples contributing to a geometric mean calculation but still be appropriately representative of the "true" 30-day geometric mean. For example, where monitoring is only conducted monthly, would it be statistically appropriate to use a rolling 5-month set of samples to calculate a geometric mean every 30 days to be compared to the WQS? Such an approach would allow 5 samples to contribute to the geometric mean calculation, but would it be statistically representative of the central tendency of the "true" 30-day period? In other words, would such an alternate procedure result in a scientifically defensible substitute for the "true" 30-day geometric mean? These are the types of questions that the statisticians in the OST/OWOW joint effort are exploring.

OST/OWOW anticipate having some type of work product available by summer 2015. The format for the work product (e.g., FAQs, white paper) has yet to be decided upon. EPA's hope is that this work will provide some insights on how an alternate procedure might be employed for assessment purposes when monitoring is infrequent or datasets are small.

EPA Region 6 believes the findings from this effort could have implications on the same questions being asked about the state of Oklahoma's implementation of its total phosphorus criterion in Scenic Rivers. EPA Region 6 is refraining from taking any action on the above described waters in Oklahoma until which time OST/OWOW have completed their work and released any recommendations based on this work.

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